

REMARKS

Claims 1-16 are pending in the present application.

Claim 12 was objected to under 37 CFR §1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claims 1-4, 6-7 and 9-16 were rejected under 35 USC §103(a) as being unpatentable over Japanese patent publication JP 10121913 (Toshiaki) in view of U.S. 4,015,436 (Seki). Claim 5 was rejected under 35 USC §103(a) as being unpatentable over Toshiaki in view of Seki as applied to claim 4, further in view of Reissue U.S. 33 408 to Khan et al. (Khan). Claim 8 was rejected under 35 USC §103(a) as being unpatentable over Toshiaki in view of Seki as applied to claim 7, further in view of U.S. 4,187,899 (Sterlini).

Alternatively, claims 1-4 and 6-16 were rejected under 35 USC §103(a) as being unpatentable over U.S. 3,889,948 (Swearingen) in view of U.S. 4,362,462 (Blotenberg). Claim 5 was rejected under 35 USC §103(a) as being unpatentable over Swearingen in view of Blotenberg as applied to claim 4, further in view of Khan. Blotenberg is spelled with an "e" according to the issued patent.

Applicants respectfully traverse the objection and rejections above.

By this amendment, claims 2-5, 8 and 13-16 are requested to be canceled; while claims 1, 6-7 and 12 are requested to be amended. Accordingly, any and all rejections of canceled claims 2-5, 8 and 13-16 are hereby rendered moot in view of the cancellation of said claims and therefore, no further remarks will be presented regarding same.

By this amendment, independent claim 1 has been amended to include the subject matter of canceled claims 3-5 and to have said subject matter presented in "clause" form, as opposed to the single paragraph from the previous Response. Such amendments are to facilitate ease of reading and understanding of the claimed subject matter. In addition, claim 1 has been amended to include, among other elements, "an outlet for the chamber in communication with a vessel adapted to disengage particles . . ." The subject matter added to claim 1 finds support from claims 3-5 as originally filed.

Claim 6 has been amended to clarify positioning of an element of said claim.

Claim 7 has been amended to provide for antecedent support between and amongst claim terminology.

Claim 12 has been amended to comply with the requirement at paragraph no. 1 (page 2) of the Office Action regarding the objection under 37 CFR §1.75(c). It respectfully is submitted that amended claim 12, now complies with §1.75(c) and therefore, the objection to said claim should be withdrawn.

The amendments to the claims do not introduce new subject matter into the present application and therefore, entry of same is respectfully requested.

Claim Rejections - 35 USC §103(a)

Amended claim 1 is the only independent claim pending in the present application. Claim 1 has been amended to include, among other elements

"a chamber in the direct cooling means, an inlet for the chamber for introduction of the cryogenic coolant to the chamber, and an outlet

for the chamber in communication with a vessel adapted to disengage particles of liquid from natural gas, the vessel having a vessel outlet for the natural gas in communication with said compression stage next in series.

The "disengagement vessel" avoids particles in the liquid from entering a downstream compression stage of the compressor.

Since amended independent claim 1 now includes the subject matter of canceled claims 3-5, which ultimately depended from claim 1, remarks provided below are with respect to the §103 rejection at page 7, paragraph nos. 14-15 of the Office Action.

The undersigned has characterized the Toshiaki and Seki references in an earlier Response, and such characterizations are repeated herein.

There is absolutely no suggestion, motivation or guidance in Toshiaki or in Seki to communicate with a vessel adapted to disengage particles of liquid from natural gas as called for in amended claim 1. The Office Action admits at paragraph no. 15 that a combination of Toshiaki in view of Seki "failed to disclose a separator in communication with the heat exchanger". Thereafter, the Office Action contends that it would be obvious to install the "separator (100)" of Khan to disengage particles of liquid from natural gas, as called for in amended independent claim 1.

Initially, it is noted that it is not clear from the Office Action why one of ordinary skill in the art would be expected to make the combination proposed. MPEP 2142 (at p. 2100-28) requires the analysis supporting a §103 rejection be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot

be sustained with merely conclusory statements; instead, there must be some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness". In re Khan, 78 USPQ 2d 1329, 1336 (Fed. Cir. 2006) (MPEP 2100-128).

The Federal Circuit has also stated that, "[t]he genius of invention is often a combination of known elements which in hindsight seems preordained. To prevent hindsight invalidation of patent claims, the law requires some 'teaching, suggestion or reason' to combine cited references." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351, 60 U.S.P.Q.2d 1001 (Fed. Cir. 2001). "Unless the prior art *itself* suggests the particular combination, it does not show that the actual invention was obvious or anticipated." *In re Mahurkar Patent Litigation*, F. Supp. 1354, 1374, 28 U.S.P.Q.2d 1801, 1817 (N.D. Ill. 1993), *aff'd*, 71 F.3d 1573, 37 U.S.P.Q.2d 1138 (Fed. Cir. 1995) (emphasis in original). "To establish a *prima facie* case of obviousness based on a combination of the content of various references, there must be some teaching, suggestion or motivation in the prior art to make the specific combination that was made by the applicant." *In re Dance*, 160 F.3d 1339, 48 U.S.P.Q.2d 1635, 1637 (Fed. Cir. 1998) (emphasis added).

It respectfully is submitted that not only would one skilled in the art not be inclined to combine the references as proposed in the Office Action, but that making the combination as proposed would still not arrive at the invention of amended independent claim 1. There would be no incentive for one of ordinary skill in the art to combine the Khan disclosure with that of Toshiaki and Seki, as doing so would defeat the purpose and operation of each of the separate references. For example, Toshiaki does not disclose nor does it suggest or contemplate a need for the disengagement vessel of independent claim 1. The Office Action sought to alter Toshiaki, which the Office Action contended one of ordinary skill in the art would see as obvious to do, by benefiting from hindsight

used when reviewing the disclosures of Seki and Khan. Such is not permitted under the MPEP when claims are being considered for obviousness in view of references cited. In addition, the addition of Khan to the disclosure of Toshiaki and Seki would render the Toshiaki reference inoperable as intended.

It respectfully is submitted that the combination of Toshiaki, Seki and Khan is invalid because any combination which would occur would immediately render Toshiaki inoperable and unsatisfactory for its intended purpose. See MPEP 2143.01 V, wherein if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984).

There is also no explanation in the Office Action why one having ordinary skill in the art would be so inclined to modify the compressor of Toshiaki to install the separator of Khan. Knowledge of applicant's disclosure must be put aside in reaching a determination of obviousness.

A statement [in an Office Action] that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art, "is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references." Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). In other words, rejections on obviousness cannot be sustained by mere conclusory statements. (MPEP 2143.01 IV). It respectfully is submitted that such is the case herein.

Accordingly, it respectfully is submitted that amended independent claim 1 is patentably distinct from the references cited, as are the claims which depend

therefrom. If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, the §103(a) rejection of the claims in view of the combination of Toshiaki and Seki, or Toshiaki, Seki and Khan, is respectfully requested to be withdrawn.

The following remarks are provided regarding the proposed combination of Swearingen, Blotenberg and Khan (Office Action, paragraph nos. 18-19 and 31-32.)

The undersigned has characterized the Swearingen and Blotenberg references in an earlier Response, and such characteristics are repeated herein.

The subject matter of independent claim 1 is directed to, among other elements, a compressor having at least two compression stages in a series. Accordingly, the compressor claimed is a single machine with a single drive and at least two compression stages. In contrast, the compressors 12 and 35, for example, of Swearingen are with different machines having different drives. See in particular Figure 3 of Swearingen and further where Swearingen discloses individual compressors such as for example compressor 12 (Col. 6, Ins. 52-53; col. 7, Ins. 30-31); compressor 19 (Col. 7, Ins. 42-43; col. 8, Ins. 5, 11); compressor 20 (Col. 7, Ins. 43-44, col. 8, In. 11); and compressor 35 (Col. 8, Ins. 62-63). That is not what is being claimed. The present invention calls for

“a chamber in the direct cooling means, an inlet for the chamber for introduction of the cryogenic coolant to the chamber, and an outlet for the chamber in communication with a vessel adapted to disengage particles of liquid from natural gas, the vessel having a

vessel outlet for the natural gas in communication with said  
compression stage next in series.

There is absolutely no suggestion or guidance, and certainly no appreciation in either of Swearingen and Blotenberg of providing the disengagement vessel as called for in amended independent claim 1.

Merely contending that Khan's separator would be seen by one having ordinary skill in the art to be obvious to combine with Swearingen and Blotenberg would be considered impermissible hindsight, absent some express showing by the Office why such a combination would be made especially since such a combination with Khan would render the disclosures of Swearingen in view of Blotenberg inoperable for their intended purpose. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984). Further, if the proposed modification or combination of the prior art would change the principal of the operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 123 USPQ 349 (CCPA 1959) (MPEP 2143.01 VI).

Therefore, it respectfully is submitted that amended independent claim 1 is patentably distinct from the combination of Swearingen and Blotenberg, and Swearingen, Blotenberg and Khan, as are the claims which depend therefrom. Accordingly, the §103(a) rejection of independent claim 1 in view of the combination of these references should be withdrawn.

Claims 6-7 and 9-12 should also be considered non-obvious in view of the references cited, whether taken alone or in the combination proposed, in view of

their dependence upon amended independent claim 1. If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. (MPEP §2143.03, In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Applicants have addressed the instant rejections with respect to amended independent claim 1 in particular, and have explained above why the Office has not met its burden to support the rejection of claim 1 under 35 U.S.C. §103. It is therefore deemed unnecessary to address specific allegations in the Office Action regarding all the dependant claims. Applicants therefore traverse the allegations in the Office Action with respect to the dependent claims pending, and do not concur with such allegations either explicitly or implicitly by not refuting each individually.

All issues raised in the Office Action are believed to have been addressed. In view of the foregoing amendments and remarks, favorable action on the merits, including entry of all amendments and allowance of all claims pending, respectfully is requested.

Respectfully submitted,

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